IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Tokuju OIKAWA et al. Conf.: 2676

Serial No. 10/058,028 Group Art Unit: 1752

Filed: January 29, 2002 Examiner: Thorl Chea

For: PHOTOTHERMOGRAPHIC MATERIAL

DECLARATION UNDER 37 CFR 1.132

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231

Sir:

I, Tokuju OIKAWA, a Japanese citizen, having a post office address of c/o Fuji Photo Film Co., Ltd., No.210, Nakanuma Minami-ashigara-shi, Kanagawa 250-0193 Japan, hereby declare and state that I received a Master's Degree from Tohoku University, Faculty of Engineering, Course of Applied Physics in March of 1989, and I was employed by Fuji Photo Film Co., Ltd. in April of 1989 and since that time I have been principally engaged in research and development of silver halide photographic materials, particularly emulsions used therein, at the Ashigara Research Laboratories of said company.

I declare further that I am the inventor of the subject matter of the claims in the above-identified application and I have read all of the documents contained in the file wrapper of the above-entitled application.

I declare further that the test described below was conducted at my direction and under my supervision and the test results are true and correct to the best of my knowledge.

EXPERIMENT AND RESULTS

Photothermographic Sample Nos. 7, 11, 15, 19 and 26 shown in Table 23 of Ito et al., U.S. Patent No. 6,150,084 (Ito '084) were prepared by using Silver Halide Emulsion A on column 92 in the manner described in the reference. These samples are referred to as Samples A-1, A-2, A-3, A-4 and A-5 in the table below.

Samples B-1, B-2, B-3, B-4 and B-5 were prepared in the same manner as Samples A-1, A-2, A-3, A-4 and A-5, respectively, except that Gold Compound G shown on page 28 of the present specification was added to Silver Halide Emulsion A in amount of $6.4 \times 10^{-3}$ mol per 1 mol of the silver contained in the emulsion.

Developed silver grain density and covering power of each sample were measured in the manner set forth on page 42 of the present specification. Sensitivity, Dmin, Dmax and variation of line width of each sample were measured in the manner set forth on pages 134-136 of the present specification.

Results of the measurements are shown in the following table.

| Sample No. | Materials | | | Evaluation | | | | | | | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Silver halide emulsion No. | Compound of the present invention or hydrazine compound (*) | Gold compound | Developed silver grain density (%) | Covering power (%) | Sensi-tivity | Dmin | | Dmax (25°C, 10%RH) | Variation of line width (μm) | |
| | | | | | | | Fresh | 50°C, 75%RH, 3days | | | |
| A-1 | Emulsion A of Ito '084 | Compound C-1 of Ito '084 | - | 1700 | 300 | 96 | 0.11 | 0.11 | 3.6 | 11 | Comparative Sample 7 of Ito '084 |
| A-2 | Emulsion A of Ito '084 | Compound C-42 of Ito '084 | - | 1700 | 300 | 94 | 0.11 | 0.11 | 3.6 | 11 | Comparative Sample 11 of Ito '084 |
| A-3 | Emulsion A of Ito '084 | Compound C-8 of Ito '084 | - | 1700 | 300 | 92 | 0.12 | 0.12 | 3.6 | 11 | Comparative Sample 15 of Ito '084 |
| A-4 | Emulsion A of Ito '084 | Compound C-57 of Ito '084 | - | 1700 | 300 | 96 | 0.12 | 0.12 | 3.6 | 12 | Comparative Sample 19 of Ito '084 |
| A-5 | Emulsion A of Ito '084 | Compound 54a (*) of Ito '084 | - | 1700 | 300 | 96 | 0.14 | 0.22 | 3.7 | 12 | Comparative Sample 26 of Ito '084 |
| B-1 | Emulsion A of Ito '084 plus gold compound | Compound C-1 of Ito '084 | G | 1800 | 310 | 225 | 0.11 | 0.11 | 3.9 | 8 | Invention |
| B-2 | Emulsion A of Ito '084 plus gold compound | Compound C-42 of Ito '084 | G | 1800 | 310 | 220 | 0.11 | 0.11 | 4.0 | 8 | Invention |
| B-3 | Emulsion A of Ito '084 plus gold compound | Compound C-8 of Ito '084 | G | 1800 | 310 | 218 | 0.12 | 0.11 | 4.0 | 8 | Invention |
| B-4 | Emulsion A of Ito '084 plus gold compound | Compound C-57 of Ito '084 | G | 1800 | 310 | 225 | 0.12 | 0.11 | 3.8 | 8 | Invention |
| B-5 | Emulsion A of Ito '084 plus gold compound | Compound 54a (*) of Ito '084 | G | 1800 | 310 | 216 | 0.18 | 0.25 | 3.9 | 11 | Comparative |

* "Compound of the present invention" is a compound satisfying any one of the claimed conditions (i) to (iii).
* Sensitivity is a relative value based on the value of Sample No. 1-1' on Table 20 of the present specification, which is taken as 100.
* Dmax values of A-1 to A-5 differ from those shown on Table 23 of Ito '084 due to the different condition for measurement.

DISCUSSION

Comparison between A-1 to A-4 and B-1 to B-4 indicates that addition of the gold compound to the silver halide emulsion containing the compound of the present invention improves sensitivity, Dmax and variation of line width without adversely affecting Dmin. The differences in sensitivity, Dmax and variation of line width are significant and superiority of A-1 to A-4 (claimed invention) is clearly shown. One skilled in the art would find that the improvements achieved with the claimed invention are unexpected.

Comparison between A-5 and B-5 indicates that addition of the gold compound to the silver halide emulsion containing the hydrazine compound improves sensitivity but increases Dmin significantly. The unexpected improvements of the claimed invention cannot be achieved in samples containing a hydrazine compound.

I believe that no one skilled in the art would have been motivated to exclude hydrazine compounds and combine a compound of the present invention with a gold compound before the claimed invention was made. I also believe that no one skilled in the art would have predicted that the combination of a compound of the present invention with a gold compound achieves improvement of sensitivity, Dmax and variation of line width without increasing Dmin, before the claimed invention was made. I trust that the claimed invention is patentable.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issuing thereon.

Dated this 27 day of January, 2004.

Tokuju Oikawa

Tokuju OIKAWA